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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/216,378	12/18/1998	RIX S. CHAN	450.250US1	9856

24333 7590 08/18/2008

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EXAMINER

LAO, LUN S

ART UNIT	PAPER NUMBER
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2615

MAIL DATE	DELIVERY MODE
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08/18/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/216,378	Applicant(s) CHAN ET AL.	
	Examiner LUN-SEE LAO	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-17, 21, 39-41 and 43-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-17, 21 and 39-41, 43-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

ETAILED ACTION

Introduction

1. This action responds to amendment filed on 05-06-08. Claims 1-2, 8, 13, 16, 41-46 have been amended and claims 39-46 have been added. Claims 6, 18-20, and 22-38, 42 have been cancelled. Claims 1-5, 7-17, 21 and 39-41, 43-45 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 7-17, 21 and 39-41, 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lambrecht (US PAT. 6,259,792) in view of Lo (US PAT. 5,425,105).

Consider claim 1, Lambrecht teaches a personal computer comprising (fig.1, col. 2, lines 9-35):

a housing (see fig.1 (154));

a microphone for detecting ambient noise (see fig.2 (108 and col. 3 lines 48-61));

a processor integrated into the housing, the microphone being coupled to the processor (see fig.2);

Art Unit: 2614

a noise cancellation module (106 in fig.2) operable on the processor (102), the noise cancellation module generating a noise cancellation signal responsive to the ambient noise detected by the microphone; and a digital signal processor coupled to the noise cancellation module (see col. 3 line 4-col. 4 line 54); but Lambrecht does not explicitly teach that the microphone is of a built-in type, Lambrecht teaches the microphone is physically located with the speaker, which in turn is a conventional speaker (col. 3, lines 48-53). One of ordinary skill in the art would have realized that for the PC (notebook computer 154) as shown in figure 1, the speaker would have been built into the PC / notebook computer. Therefore, the microphone would have been built into the PC / notebook computer, to be physically located in the computer housing for saving space and used less wire.

On the other hand, Lambrecht does not teach the mixing of the noise cancellation signal with an audio signal is provided by a digital signal processor.

Lo teaches noise cancellation, wherein a digital signal processor (see figs. 3-4) for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to a standard headphone compatible audio output connection to reduce headphone noise (see fig.7 and col.3 line 59-col.4 line 68 and col. 5 line 48-col. 6 line 8).

Lambrecht as modified by Lo discloses a digital signal processor coupled to the noise cancellation module (see fig.2) and configured to mix the noise cancellation signal with an audio signal provided from a desired source to output a mixed signal, the digital signal processor being connected to a standard headphone compatible audio output

Art Unit: 2614

connection integrated on the housing such that the mixed signal is available at the audio output connection; wherein the mixed signal reproduced by headphones connected to the audio output connection reduces noise perceived by a user of a headphone connected to the standard headphone compatible audio output connection wearing the headphones and listening to the mixed signal through the headphones (see figs 1-2 and col. 3 line 4-col. 4 line 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to include digital signal processing as taught by Lo in the system of Lambrecht to perform the mixing. One of ordinary skill in the art would have been motivated to do so because this would have maximized the effectiveness of the noise cancellation under all conditions and providing entertainment to the listener.

Consider claims 2-3, Lambrecht discloses that the personal computer further comprising an optical disc drive integrated into the housing of the computer, the optical disc drive being configured to playback media to provide the audio signal to the digital signal processor (see col.2 lines 9-35 and col.3 lines35-42) and the noise reduction scheme of the noise cancellation module comprises a software program running on a processor (see col.5 line 40-col.6 line 25).

Consider claim 4, Lambercht discloses that the personal computer wherein the microprocessor is the central processing unit for the computer system(see col.3 line 24-col.4 line 55).

Consider claim 5, Lo discloses that the noise reduction scheme includes the digital signal processor is located on a sound board (see figs. 3, 4 and 7 and col.3 line 59-col.4 line 68 and col. 5 line 48-col. 6 line 8).

Consider claim 7, Lambrecht discloses that the personal computer of the audio output connection is compatible with a standard set of headphones (see fig.2 #108 and col.3 lines 3-12) and the computer system is a mobile computer (see fig.1).

Consider claim 8, it is a method claim of claim 1 and thus note claim 1 for discussion.

Consider claim 9, Lambrecht teaches that the method of reducing ambient noise further comprising converting the detected ambient noise to an electrical signal (see col.3 line 45-col.4 line 25).

Consider claim 10, Lambrecht as modified by Lo teaches generating the noise cancellation signal is performed by a processor of the mobile computer system, and mixing the noise cancellation signal is performed by a sound card of the mobile computing system that is connected to the standard headphone compatible audio output connection of the mobile computer system(see fig.1 # 154 and col.3 lines 2-30).

Consider claims 11 and 12, Lambrecht teaches the generation of the noise cancellation signal is done when the optical disc drive is active (see col.2 lines 9-35 and col.5 line 20-col.6 line 47); generation of the noise cancellation signal is initiated manually via a software interface (see col.2 lines 9-35 and col.5 line 40-col. line 50).

Consider claim 13, it is a computer program product claim of the method claim 8, and thus note claim 8 for discussion. The operation of Lambrecht as modified by

Art Unit: 2614

McIntosh is under the control of computer software (Lambrecht, col. 5, starting from line 60) (Lo, control algorithm implemented by Figs 3-4 and 7, col. 4, 23-col. 5 line 68; software control of digital signal processor, col. 2, lines 50-54; software of the headset system, col. 5, line 48-col. 6 line 7). Storing instructions in a machine/computer readable medium would have been obvious for the purpose of portability.

Consider claims 14-15, Lambrecht as modified by Lo teaches the machine readable medium wherein the step of generating a noise cancellation signal is initiated and performed automatically when an optical disc drive of the computer is active and producing the audio signal (see col.3 line 20-col.4 line 56) and; of generating a noise cancellation signal is activated through a software interface (such as, Microsoft operation software and see col.4 lines 5-55 and col. 5 line 60-67).

Regarding claim 16, it is covered by claim 1 except for portable housing, microprocessor, memory and storage device. Lambrecht further teaches housing (fig.1, computer 154), microprocessor (fig.2, 102) inherently mounted on the housing, memory coupled to the microprocessor (fig.2, 112) and storage device coupled to the microprocessor (hard disc, col. 3, lines 36-41).

Consider claims 17 and 21, Lambrecht teaches that the personal computer of further comprising an integrated display device (see fig.1 #154); and the audio source comprises an optical disc player (see col. 3 line 37-41).

Consider claims 39 and 40, Lambrecht as modified by Lo teaches the personal computer wherein the mixed audio signal and noise cancellation signal are further directed to a speaker integrated into the case of the computer (see col. 2 lines 55-64);

Art Unit: 2614

and the machine readable medium wherein the mixing of the audio signal and noise cancellation signal is performed by a processor integrated into the case of the computer (see col. 2 lines 55-64).

Consider claim 41, Lambrecht teaches a personal computer system with integrated noise reduction, comprising:

- a personal computer housing (see fig.1);

- a processor integrated into the housing (see figs 1 and 2);

- an audio source integrated into the housing and configured to produce an audio signal, the audio source including an optical disc drive configured to playback media to provide the audio signal (see col. 3 line 4-68);

- a microphone capable of detecting noise ambient to the housing, the microphone being coupled to the microprocessor to provide a signal to the processor corresponding to an ambient noise level (see fig. 2);

- a noise cancellation module(see fig.2 (106) operable on the processor(102), the noise cancellation module generating a noise cancellation signal responsive to the signal from the microphone corresponding to the ambient noise level; and a digital signal processor coupled to the noise cancellation module(see col. 3 line 4-col. 4 line 54); but Lambrecht does not explicitly teach that the microphone is of a built-in type, Lambrecht teaches the microphone is physically located with the speaker, which in turn is a conventional speaker (col. 3, lines 48-53). One of ordinary skill in the art would have realized that for the PC (notebook computer 154) as shown in figure 1, the speaker would have been built into the PC / notebook computer. Therefore, the microphone

Art Unit: 2614

would have been built into the PC / notebook computer, to be physically located in the computer housing for saving space and used less wire.

On the other hand, Lambrecht does not teach the mixing of the noise cancellation signal with an audio signal is provided by a digital signal processor.

Lo teaches noise cancellation, wherein a digital signal processor (see figs. 3-4) for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to a standard headphone compatible audio output connection to reduce headphone noise (see fig.7 and col.3 line 59-col.4 line 68 and col. 5 line 48-col. 6 line 8).

Lambrecht as modified by Lo discloses a digital signal processor coupled to the noise cancellation module (see fig.2 (106)) and configured to mix the noise cancellation signal with an audio signal provided from a desired source to output a mixed signal (see col. 2 lines 55-64), the digital signal processor being connected to a standard headphone compatible audio output connection integrated on the housing such that the mixed signal is available at the audio output connection; wherein the mixed signal reproduced by headphones connected to the audio output connection reduces noise perceived by a user wearing the headphones and listening to the mixed signal through the headphones (see figs 1-2 and col. 3 line 4-col. 4 line 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to include digital signal processing as taught by Lo in the system of Lambrecht to perform the mixing. One of ordinary skill in the art would have

Art Unit: 2614

been motivated to do so because this would have maximized the effectiveness of the noise cancellation under all conditions and providing entertainment to the listener.

Consider claims 43-45, Lambrecht teaches the system wherein the noise cancellation module-comprises a software program running on a processor(see figs 1 and 2, such as, Microsoft operation software and see col.4 lines 5-55 and col. 5 line 60-67); and the system wherein the processor is the central processing unit for the computer system (see fig.2 (102) and col. 3 lines 13-21) and the system wherein the digital signal processor is located on a sound card integrated into the housing (se figs. 1 and 2 and col. 5 line 10-68).

Response to Arguments

4. Applicant's arguments with respect to claims 1-5, 7-17, 21 and 39-41, 43-45 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 2614

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Any response to this action should be mailed to:

Mail Stop ____ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:
(571) 273-8300

Hand-delivered responses should be brought to:
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (571) 272-7501. The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding

Art Unit: 2614

should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao,Lun-See
/LUN-SEE LAO/
Examiner, Art Unit 2615
Patent Examiner
US Patent and Trademark Office
Knox
571-272-7501
Date 08-15-2008

/Suhan Ni/

Primary Examiner, Art Unit 2614